MEETING MINUTES (FINAL)

CITY OF TUCSON HABITAT CONSERVATION PLAN
Technical Advisory Committee
Wednesday, October 3, 2007, 2:00 – 5:00 p.m.
Arizona Game and Fish Department
Tucson, Arizona

ATTENDEES

City of Tucson (COT) Habitat Conservation Plan (HCP) Technical Advisory Committee (TAC) members present:
Dennis Abbate (Arizona Game and Fish Department)
Rich Glinski (Arizona Game and Fish Department – *retired*)
Trevor Hare (Sky Island Alliance/Coalition for Sonoran Desert Protection)
Ralph Marra (Tucson Water)
Guy McPherson (University of Arizona School of Natural Resources)
Linwood Smith (Environmental Planning Group, Inc.)

Other Attendees present:
Ann Audrey (City of Tucson – Office of Conservation and Sustainable Development)
Julia Fonseca (Pima County Regional Flood Control District)
Leslie Liberti (City of Tucson – Office of Conservation and Sustainable Development)
Ries Lindley (Tucson Water)
Joseph Linville (City of Tucson – Development Services Department)

1. Minutes

8/15/2007 Draft Meeting Minutes: Dennis requested more time to review the minutes and e-mail comments before they are finalized. Otherwise, the TAC approved the minutes with Guy's edit on page 1.

9/19/2007 Draft Meeting Minutes: Guy's edit and Ralph's comment were approved. Another statement by Tucson Water was added at the meeting, which was also approved.

2. Updates

Julia reported that Brian Powell was hired by the Pima County Parks and Recreation Department to oversee development of the Pima County Multi-species Conservation Plan (MSCP) monitoring plan. Additional staff for the monitoring plan effort will be hired with funds ($250,000) from the Arizona Game and Fish Department (AGFD) and some hiring will occur through the University of Arizona. The position announcements have been officially posted.

Julia also reported that there is a proposal for Interstate-10 bypass roads, with one proposed route through Avra Valley and the Southlands. If selected, this route could affect the City of Tucson (COT) Habitat Conservation Plan (HCP). Pima County has acknowledged that there are projects in these areas beyond the County's control. Possible locations and impacts would need to be addressed in the Changed Circumstances section of the County's HCP.

Dennis asked Julia how specific this proposed route might be. Julia responded that the Arizona Department of Transportation (ADOT) has a contractor examining eight alternatives for feasibility, construction costs, etc., with the goal of relieving congestion through Tucson. Of the eight road alternatives that would go through Pima County, one of these would pass through Avra Valley. Julia participated in an ADOT site tour, but otherwise she does not have much information. Apparently, there is a map on the ADOT web site. There was an ADOT meeting in Tucson that Ralph attended. One alternative splits off of I-10, goes south of San Xavier, and along some Pima County, Arizona State Land Department (ASLD), and possibly City of Tucson (COT)-owned lands. This alternative would, most likely, optimize revenue for (ASLD). He was unsure what the time frame is for the outcome of the study.

Dennis provided an update on the tracking surveys of lesser long-nosed bat (LLNB) saying that staff members from AGFD are actively pursuing them and have trapped at seven different sites. LLNB have been caught at five locations and four individuals have been outfitted with locator transmitters to show AGFD staff their movements in and around the Tucson region. Two LLNB went to the Box Canyon area (i.e. Saguaro National Park East, on the south/Rincon Valley side). The third individual returned to roost in that general area, but further south near the Colossal Cave area. The fourth LLNB was tracked to the vicinity of Agua Caliente Canyon in the Redington pass area, but they could not track the bat's location precisely. Some bats moved through and foraged in the Catalina Mountain foothills area and midtown (1st and River), with one moving in the La Canada area. So far, radio-marked LLNB have stayed north of River Road as they move east and west until reaching Sabino Canyon Road where they begin heading southeast and toward the Rincon Valley area. One theory about their movements is that they are following darker corridors, possibly along washes or foothill areas with less light. AGFD staff members were going out again on 10/3/07 to continue tracking.

Shawn Lowery of AGFD observed LLNB on Mt. Lemmon at feeders with the temperature at 40 degrees F. Dennis noted that some LLNB have traveled approximately 20 miles or more to get to neighborhood feeders. They can fly 20 miles in less than an hour (making them difficult to track by truck). He knows of several individuals who come into neighborhoods and forage at different feeders for hours and also spend time resting before heading back to their main roost. Thus, they are capable of quick, long distance movements to forage in the Tucson urban area. Julia asked about whether georeferenced data is available. Dennis says they are collecting GPS data, and can get triangulations when they stay around neighborhoods, though it is harder to get exact location data as they move quickly across town. One alternative could use triangulation by putting multiple people at stationary positions on hilltops around town. However, this assumes you know general movement routes and there are no barriers. While bats are being reported by residents in various locations, the number of bats observed at feeders has decreased when compared to last year (2006). The number of LLNB observed coming to individual feeders at any one time will only be 6 or less. Ralph asked how this monsoon season compared to last year's wet monsoon. Dennis said that in the case of LLNB, their focus is on saguaro fruit and pollen from cactus flowers and agave flowers, and this year, there was a significant agave bloom at some elevations. In contrast, there was a decreased agave bloom last year in spite of the heavy rain. It was speculated that last year's rain contributed to a more productive agave bloom this year.

Julia asked if LLNB have regional fidelity. Dennis responded by saying that visiting hummingbird feeders appears to be a learned behavior from other bats and he observes that some bats outfitted with signal transmitting devices visit the same feeders over multiple nights. He does not know if this happens year-to-year (i.e. if the same individual bats visiting feeders during one year return to the same feeders in a subsequent year). Dennis said they begin to leave mid-to-late October, and will be tracked by AGFD staff as long as they remain in the region. There are reports in Green Valley that bats drain hummingbird feeders every night, then just disappear. Weather events, temperature changes, and reduction in food supply could be what triggers their leaving. AGFD are going out four-to-five nights a week to track LLNB and will produce a report on these activities at the end of the season. So far, there is a very similar pattern to what was anecdotally observed last year. Ries asked how high LLNB typically fly from feeding areas to roosts. Dennis said he has been told by other researchers they move at around 100 feet off the ground and that they navigate by eyesight more than other species that primarily use echolocation.

Other updates:
The Resource Planning Advisory Committee (RPAC) is fully approved and will commence meeting soon. A handout listing the RPAC membership composition was distributed to the TAC. This group will work on consolidating watercourse ordinances to develop an Environmentally Sensitive Land Ordinance. It will also serve as the stakeholder group for the COT HCP. With proposition 207 being an issue, and the Environmental Protection Agency's (EPA's) requirement that greenhouse gases be regulated, environmental preservation could be viewed as a safety issue. New ordinances that address public safety are allowed under proposition 207.

3. Discussion: Potential Cienega Creek Conservation Strategies
Julia reported that the conservation work that Pima County is trying to do around Cienega Creek is prompted by Pima County's Sonoran Desert Conservation Plan (SDCP) and not Pima County's Multi-species Conservation Plan (MSCP). For example, having a large ranch holding (e.g. Bar B ranch, which is south of I-10 along Davidson Canyon and includes a lot of leased land) does not meet requirements for the MSCP. Yet, Pima County is doing this to follow through on public interest in this (i.e. protecting the cultural value of ranches for the community by preventing them from being developed).

Goals:
<u>A. Trying to reconcile the urban footprint with reducing impacts to resources on the ground.</u>
Julia distributed a new, Pima County Conservation Land System (CLS) map from August 2007. The CLS was developed by the Science Technical Advisory Team for the MSCP and delineates biological core area, important riparian areas (the "veins and arteries" of the system), and multiple use areas. Thus, through this CLS, Pima County is encouraging more urban growth in the white areas of the map and less growth in the colored areas of the map. There have been past decisions that have not considered resources on the ground, such as the conditional zoning of the Vail La Posta Quemada Ranch, which has been repealed. There is interest in transferring development rights between Pima County and COT, which Julia thought would be a good strategy. For this to occur, an ordinance would need to be adopted by COT Mayor and Council (M&C). The ordinance would need to designate "sending" and "receiving" areas for zoning density, where zoning would either increase or decrease based on resources preservation. State

level legislation would be needed to allow transfers between cities and counties. However, no legislation has been introduced. The County has the ordinance to do the Transfer of Development Rights program. Julia does not think this has been implemented yet at specific sites.

In terms of acquisition activity, Pima County has been buying land, extending Colossal Cave Mountain Park, and buying Bar B Ranch lands. The County is also looking at new potential land acquisition for the Rincon Valley area in the 2008 bond Measure. There is still quite a bit of funding left from the 2004 bond, but it is difficult to find willing sellers. However, this may be changing since development has slowed. Also, the appraisal process used by Pima County does not necessarily meet expectations of landowners. Next Thursday is the deadline for listing lands for acquisition through the 2008 bond measure. The COT Parks and Recreation Department, Manager's Office, and Mayor's Office submitted a request for land acquisition, but these needed to be reduced because costs were too high.

Ralph noted differences between habitat corridor arrows on Pima County's CLS map for Avra Valley and potential corridor arrows shown on COT HCP draft maps. Julia noted that the CLS map indicates areas where connectivity has been compromised (e.g. Shuck Toak district of the Tohono O'odham Nation, Central Arizona Project (CAP) area, etc.). So, arrows indicate that restoration is needed. In contrast, the COT HCP connectivity lines show where connectivity is possible and needed. Ralph noted an arrow that goes north from Shuck Toak. This indicates the barrier is an east-west feature that compromised the north-south connection, so the arrow on the map is shown as a north south connection that is compromised. Trevor noted that the COT HCP map is at a more detailed scale, allowing the TAC to show possible and needed connectivity more finely.

Julia asked if the TAC has developed a reserve design yet for the HCP before attempting to get conservation measures through rezoning. Pima County used the CLS map in their rezoning process to help guide development in the regional landscape. On the landscape level, one thought was to accomplish this by revising the NPPO from being specimen focused to being more landscape focused. According to Trevor, other landscape-level tools in the City of Tucson are a reserve system based on the CLS, development densities, State Land locations, and others.

<u>B. Manage water resources to address resources used by species in Cienega Creek.</u>
Julia noted that there is a proposal to extend the Tucson Water reclaimed system to Del Lago Golf Course with funds through the Pima County bond. Pima County's Board of Supervisors required, prior to approval of a master planned community, an agreement that they use reclaimed water when it becomes available. Ralph noted that the Pima County bond would provide funds to help finance new reclaimed water pipelines, but Tucson Water needs to be consulted about the availability of reclaimed water and the capacity of the reclaimed water. Tucson Water is in the process of increasing system capacity by expanding its reclaimed water production and distribution systems. At the same time, Pima County's on-going Wastewater Management Department Regional Optimization Master Plan (ROMP) could cause a major change in how reclaimed water will be produced, distributed, and used in the future. Ralph noted that the County's ROMP plans are continuing to evolve and there is a lot of uncertainty.

Trevor noted that on the east side of the Southlands, in the Cienega Creek watershed, there should be no substantial groundwater pumping. Julia noted that Pima County is testing the hypothesis that Cienega Creek may be isolated hydrologically from COT groundwater pumping sites. Julia pointed out that there is a geological structure called the Vail fault. To the west of it, the aquifer is thousands of feet deep, but to the east of it, the aquifer is only about 40 feet deep. As a result, upgradient pumping may have an effect, but downstream pumping may not have an effect.

Ralph asked if there are many domestic wells in the area. Julia said many wells were drilled dry, such as in the Colossal Cave area. Ralph said this is analogous to the Tanque Verde area where there are local faults and where water levels differ quite a bit on either side of the faults. There are many domestic wells around the Forty-niners Country Club area that have a profound effect on the hydrology of the surrounding area. Ralph wondered if domestic pumpage has the same effect around Cienega Creek. Julia said the important issue here is that the Vail Water Company, which has a Central Arizona Project allocation, has jurisdiction in this area of interest. If COT acquired the Vail Water Company, COT has great potential for conservation in this area. There is the potential to craft and broker deals now to restore flow in Cienega Creek through such an approach.

Pima County is hoping to get more funds through the 2008 bond to purchase water rights to restore flow in Cienega Creek. Ralph noted that Houghton area sewer lines could possibly be managed to decant some water off the lines and treat it locally, and that Tucson Water was also looking at this potential approach at this time. However, this approach did not make the cut by Pima County in the Houghton Area Master Plan. Julia thinks Pima County still has the land to build the facility. Ralph thought Pima County chose another alternative based on conveyance to the regional wastewater plants as opposed to local treatment. *[Action Item: Ralph will provide the study that describes Pima County's decision on water treatment as part of the Houghton Area Master Plan.]* Trevor noted that, with Southlands developing in the next 20 years, there will need to be local treatment of effluent.

Pima County has sponsored research in the Cienega Creek area about where water comes from, where it goes, chemical characteristics, hydrogeology, and other water-related factors. Modeling has been focused on threats from Empirita Ranch and other threats that have now been resolved.

C. <u>Addressing nonnative species in Cienega Creek</u>.
Cienega Creek has the greatest aquatic diversity in Pima County, and exceeds the San Pedro River from an aquatic diversity standpoint. Pima County does not currently have a response plan for threats to this area from nonnative species. Flooding regimes help keep it clean for now. Pima County needs AGFD's help and cooperation in both developing a response plan and with any response measures. They do have a fish barrier, which is the structure that diverts water down to Del Lago Golf Course. It was built in 1908 and is in good condition. Volunteers walk the length of Cienega Creek and look for nonnative species. The U.S. Fish and Wildlife Service (FWS) submitted a biological opinion stating that the U.S. Bureau of Reclamation needs to monitor the Creek, but there is still no response plan developed. Trevor reported that The Nature Conservancy (TNC) staff members said they are going to start a Cienega Creek-wide, nonnative

species monitoring effort. Also, AGFD will be asked to start a nonnative aquatic species (NNAS) strategic planning effort in Arizona.

Other Discussion:
Ralph asked about the agricultural inholdings on the CLS map. He noted that old COT agricultural lands are not represented on the map as such. Central Avra Valley Storage and Recovery Project (CAVSARP) and Southern Avra Valley Storage and Recovery Project (SAVSARP) lands, etc. are shown differently than agricultural land. [*Action Item: Julia will check on why some Avra Valley COT lands are not classified as agricultural. Tucson Water will provide Julia this data through Ralph.*]

Going back to the discussion of land use, Julia noted that a lot of effort has been expended by Pima County to reduce impacts of all-terrain vehicles (ATVs), but, to date, have not been very effective. Also, Kinder Morgan is installing a second pipeline across a large swath along Interstate 10 in this area. *[Action Item: OCSD staff will look for a GIS file for the Kinder Morgan second pipeline alignment along Interstate 10 in the area]*. There is a mitigation fund associated with this that Pima County wants to use to construct ATV barriers. It is difficult for law enforcement officials to intercept ATVs and cite the drivers. ATV management is costly for Pima County.

Pima County and COT could both create revenue streams (Note: Pima County has done this with Walmart and others) earmarking money for land management. Funds are not currently earmarked for the Cienega Creek area, but the area could be designated for use of the land management funds, related to the general areas where big box stores are built. Trevor said that the large, proposed mall (proposed by the company that built the Mall of America) would be a good subject for this along I-10. Rosemont mine also would have a huge impact and might be a good subject for this. The COT could also help support "Unique Waters" designation through the Pima Association of Governments (PAG) for Davidson Canyon or "Outstanding Waters" designation, so that the Arizona Department of Environmental Quality (ADEQ) cannot issue a permit to pollute surface water. There is very high quality water through Davidson Canyon underflow. Pima County initiated this process, and PAG is just now taking up this issue through their Triennial review.

Ries asked about "Unique Waters" designation for Davidson Canyon, which shows it is already highly impacted by sedimentation. One of the criteria for designation is sedimentation and he asked who should be approached to manage it. Increased sulfates are likely to be a consequence of copper mining. At a certain level, tamarisk trees colonize more saline areas, which is related to sulfate and chloride loading.

Dennis asked about the Union Pacific railroad's level of participation in water quality discussions. This is in light of the railroad's drainage from the rail lines and whether this added to sedimentation problems. Pima County has complained to ADEQ about railroad ties and batteries, removal of contaminated soils, a berm built with mine tailings, and issues of toxic spills. There is a contingency plan for spill, but it would be helpful to have more dialogue with Union Pacific. ADEQ was not responsive to the Cienega Creek vulnerability. It was noted that it has been a challenge to maintain stable contact with railroad staff. Trevor said there are also

wildlife mortality issues associated with the railroad. It was suggested that PAG is where this discussion should occur.

4. City of Tucson's Native Plant Preservation Ordinance (NPPO)
Joe Linville, lead planner with COT Development Services Department's (DSD) landscape section, has been reviewing Native Plant Preservation plans since 1999. DSD reviews all development plans related to landscape, watercourse, hillside, scenic corridors, and other landscape and plant-related reviews. Joe provided the history of when the NPPO was created. It was adopted by COT in March 1997 and since it has been 10 years since adoption, this is a good time to review the NPPO for its effectiveness.

Joe provided the TAC with background on the NPPO and how it works. The use of native plants and native plant preservation has strong support in the City of Tucson and the development community seems comfortable with the NPPO. Pima County and the State of Arizona have both followed with NPPOs of their own. These efforts have protected thousands of acres of open spaces. The intent of the code addresses Tucson's setting and its unique biological communities. It also addresses the General Plan passed in 1992 and its goals for preserving native plants through sensitive site design. The NPPO addresses removal and mitigation for plants. According to the ordinance purpose statement on page 299, regulations were intended to provide for protection of plants to preserve a sense of place, maintain property values, contribute to economic development, air quality, and other factors. Intent statements are usually arranged in order of relevance. Joe noted that retaining habitat was fairly low on the list compared to other intents, so the ordinance has been criticized for not protecting specific habitat areas. It has been fairy flexible, because sites are generally developable under the NPPO.

The NPPO applies to all new development and expansion of existing development. There is an opportunity to overlap with other protection overlays (i.e. Environmental Resource Zone (ERZ), Hillside Development Zone (HDZ), etc.). A developer needs a plan prior to site modifications. The COT does not issue permits until there is an approved NPPO. Exceptions are lots developed prior to 1997, where there are no protected plants on site, or where plants are not likely to be impacted by development. There is a requirement for professional expertise in preparing a Native Plant Preservation Plan. The plan must be prepared by certified arborists, landscape architects, or others with expertise.

The COT does not have a salvage arrangement process such as Oro Valley has. Developers are concerned about insurance liability with people salvaging plants on site. (Note: Pima County allows the Tucson Cactus and Succulent Society to salvage plants on lands scheduled for development, but this group has its own liability insurance.).

The NPPO requires certification that the Native Plant Preservation Plan is in compliance with federal permits and state requirements (3.8.4.5). This could be an appropriate location to add language about compliance with the COT HCP when it takes effect. Protected native plants are listed on pages 302 and 303 (3.8.5). Nothing has changed on the plant list since the NPPO was adopted. Therefore, a correction is needed on the genera for palo verde species. Also, the Federally Endangered Nichol's Turk's head cactus is not on the NPPO Protected Native Plant List, though it is not found within the COT. Other species to consider for addition to the NPPO

Protected Native Plant List include species such as hedgehog cactus, beehive cactus, and chollas that host pollinators of Pima pineapple cactus (PPC). Pollinators for PPC cannot survive on PPC alone, so they need cholla to host pollinators when PPC flowers are not in bloom. Yet, there are so many cholla species, if any additional protection measures are undertaken, we may want to concentrate on those chollas that overlap with PPC.

Leslie noted there had been a previous discussion about how far pollinators can migrate for PPC, but the presence of cholla species could counteract this distance process. [*Action Item: OCSD staff will check with Marc Baker or Christopher MacDonald (University of Arizona), about appropriate cholla species.]* Guy noted that it would be beneficial to consider chollas that flower outside the PPC flowering season to provide temporal continuity. Therefore, we may need to preserve chollas that bloom early in the season (i.e. May and early June) to feed pollinators. When PPCs flower, lots of other species flower, too.

Julia said that incentives for plant preservation-in-place in more fringe areas of Tucson, such as the Southlands area, would help in preserving native soils. Dennis asked if the NPPO applies only to natural areas, or if there is protection for native plants put in place by landscaping. Joe said that it does apply to redevelopment. The COT does not have records of how the plants got there, and regulations are applied evenly to protected plants wherever they occur by applying minimum preservation for a group of plants and requiring mitigation. Requirements for Endangered species and crested saguaros request the applicant to preserve these plants in place or salvage and transplant them on site.

The question was raised about the success of transplants with PPC. The response was that this has not been much of an issue to date in the COT since they are found infrequently, so there is no information from COT projects to address this question. Leslie asked what the implications will be when Southlands projects are proposed in areas with large numbers of PPC. She asked that since the NPPO does not define transplantability in the ordinance, but rather it is addressed in the development standard, if lack of viability of transplants could be addressed in the development standard. Joe said if a species is identified as having low transplantability, preservation has to trump transplanting. Transplantability is rated as low, medium, and high, based on location and species type.

Trevor asked that since transplantability of saguaros is now known to be much lower then previously thought if the development standard has been revised accordingly. Joe responded that the professional preparing the report rates the transplantability for each plant. Joe said that the COT does question viability ratings of plants from professionals. There is the potential for COT to reference scientific data being compiled on transplantability that could be applied to species as a whole. The way the NPPO was written assumes all plants are transplantable. Leslie noted that since it is defined in the development standard, the ordinance itself would not need to be revised to address this.

Joe provided examples for the “Plant Inventory Methodology.” He said that the NPPO addressed crested saguaros and PPC, requiring 100 percent protection or transplanting on site. For saguaros, there is a requirement to preserve 50 percent. Referring to handouts he provided, Joe gave an example of protected level calculations for saguaros. He provided a second example of

velvet mesquite, where preservation required is 30 percent. For his third example, Joe used PPC, where 100 percent preservation is required. The number of plants required for mitigation depends on how many are preserved in place and the number moved. The problem with mitigation ratios for PPC is that people cannot buy plants from a nursery for mitigation. There is no requirement that plants are acquired locally so they are genetically consistent with local plants. This genetic issue is relevant to PPC.

Trevor asked Joe to confirm whether only Endangered species are protected at 100 percent while Threatened species are not protected. This lack of protection for Threatened species is another weakness in the NPPO. Joe felt those Federally listed species and those species planned for in the COT HCP should be added into NPPO consideration.

Another alternative allowed in the NPPO is the "Plant Appraisal Methodology." Under this methodology, an approved appraiser determines the financial value of plants. Viability is not a factor. The Guide for Plant Appraisal is used to determine this, which was developed by the insurance industry. There is no information for appraising the value of Endangered species or crested saguaros. Joe said this methodology is not used much because it becomes very expensive in some cases. It is more appropriate for application to landscaped areas rather than natural areas. Most natural areas are rated fairly low on a number of factors. Appraisals are hard to do in the desert. It is one of the least-used forms of compliance with the Ordinance. The appraised values may be used to buy plants to put in other parts of the site. Appraisal value allows for quicker site development. People in Pima County are buying into a PPC mitigation bank is due to the Endangered Species Act rather than the NPPO. *[Action Item: OCSD staff will ask Dan Signor of Pima County Development Services Department how Pima County deals with their NPPO and how mitigation banking for the PPC through the ESA overlaps, or not, with Pima County's NPPO.]*

The question was asked whether a person can spend her or his appraised costs trading one species for another. Joe's response was that one must spend the appraised value on the species that was lost. According to Julia and others, the appraisal method is inappropriate for PPC and the needle-spined pineapple cactus. The use of these funds for PPC mitigation banks needs to be very carefully managed.

Joe continued by saying that one can also use the "Set Aside Methodology." The requirement is to preserve 30% of a parcel as natural undisturbed open space. With this option, one must submit an Environmental Resources Report (ERR), requiring a vegetation and wildlife map and a statement from the Arizona Game and Fish Department (AGFD) regarding wildlife and plant associations in the ERR. The set aside methodology gets used less frequently than COT had hoped. The inventory methodology is the most popular method, given that it is relatively inexpensive and highly flexible. The set aside method is usually used when there are overlapping requirements for watercourse preservation or hillside protection, etc. The set aside methodology can also overlap with watercourse protection requirements. The COT seeks to set aside areas with the highest resource values, but Joe does not have a map showing specifically where high resource areas are present. Leslie said that this can be provided at a macro-scale that shows upland areas of more likely habitat for PPC, compared with riparian areas, but these will not apply on a site-specific basis.

Joe continued by stating that he inspects about 20 percent of proposed development sites. Joe has an inspector who performs the inspection prior to grading to check the site against the approved plans. He verifies that plants are properly identified, labeled, inventoried, etc. The inspector also performs a final inspection after the development has been completed.

Leslie suggested that, through the development standard, it might be possible to steer people in a direction towards the most feasible option on the list. She noted that the inventory/appraisal combined methodology could be used at sites for PPC where mitigation banking funds could be used for PPC mitigation banks. She wondered which provided the best protection for PPC: Preserving high quality areas in place versus trying to preserve local pockets of PPC. Trevor noted that while the COT and Pima County have conceded the loss of the PPC population along Ajo Way, the southern population around Sahuarita is even more important. Thus, one strategy would be to start with small, protected areas on the north part of the Southlands, then protect bigger areas around the Experimental Range near the southern border of the Southlands. Julia pointed out the range overlaps between PPC and needle-spined pineapple cactus (NSPC) are important preservation areas. There are fewer places with NSPC than PPC. Julia said that there is low density PPC north of I-10 where preservation-in-place may not be viable. She thought most people, given the opportunity to do off-site protection, will do so.

Trevor asked about enforcement and whether the NPPO applies just to development, or if general plant destruction is subject to this code. Joe said this is a civil code that anyone could be cited under. Julia asked if one didn't intend to draw a permit how that person could be subject to this ordinance. Joe said that the definition of development is any alteration of vegetation, so it would apply to people damaging plants (see COT Land Use Code 6.2.4 DEFINITIONS - D. "Development. Any human alteration to the state of land, including its vegetation, soil, geology, or hydrology, for any residential, commercial, industrial, utility, or other use, such as, but not limited to, clearing, grubbing, or grading of land, and structural improvements, e.g., buildings, walls, fences, signs, and vehicular use areas."). In terms of incorporating this with the HCP, a specific paragraph could be developed for species that could guide applicants to address needs appropriately.

5. Update on desert tortoise

Julia worked with desert tortoise biologists to look at habitat maps. There was a group of models that captured the most known desert tortoise locations, which was used to develop a "bedrock" model for desert tortoise locations. Desert tortoises have moved from Saguaro National Park East south to the Santa Rita Mountains. In one case, the tortoise moved herself down and back to Saguaro National Park East, just receiving human help to cross I-10. Julia says they now have four habitat models. They were focusing on caliche layers, but that factor still did not capture all the existing known locations with the models, such as in the Santa Rita Experimental Range. [*Action Item: Julia will send desert tortoise model results to Ann.*]

Desert tortoise habitat is likely to be site specific related to those features that allow them to be on site. Ann noted the development requirements of the Rincon Knolls subdivision relevant to desert tortoise. These included requirements for monitoring during development, installing desert tortoise barriers, adaptive management, and desert tortoise handling. This is a good site for long

term monitoring because the "before" population has been surveyed. [*Action Item: Ann will provide the guidelines for the Rincon Knolls development to Mike Ingraldi and others dealing with desert tortoise crossings*.]

6. Call to audience
No members of the public were in attendance.

7. Adjournment

Summary of Action Items:

- Ralph will provide the study that describes Pima County's decision on water treatment as part of the Houghton Area Master Plan;
- Julia will check on why some Avra Valley COT lands are not classified as agricultural. Tucson Water will provide Julia this data through Ralph;
- OCSD staff will look for a GIS file for the Kinder Morgan second pipeline alignment along Interstate 10 in the area;
- OCSD staff will check with Mark Baker (University of Arizona) or Christopher MacDonald (University of Arizona), about appropriate cholla species;
- OCSD staff will ask Dan Signor of Pima County Development Services Department how Pima County deals with their NPPO and how mitigation banking for the PPC through the ESA overlaps, or not, with Pima County's NPPO;
- Julia will send desert tortoise model results to Ann;
- Ann will provide the guidelines for the Rincon Knolls development to Mike Ingraldi and others dealing with desert tortoise crossings.